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(54) Title: METHOD AND APPARATUS FOR DETECTING AND DETERRING THE SUBMISSION OF SIMILAR OFFERS IN A COMMERCE SYSTEM

(54) Titre: PROCEDE ET APPAREIL DE DETECTION ET DE PREVENTION DE LA SOUMISSION D'OFFRES SIMILAIRES DANS UN SYSTEME COMMERCIAL

(57) Abstract

A system and method for processing buyer offers of products, to diminish the occurrence of similar, repetitive offers whereby buyers "ping" to determine a confidential floor price for the products. In one embodiment, a first offer is received from a buyer, the first offer including a plurality of offer terms each having a respective first value. A second offer is later received from the same party, the second offer including generally the same plurality of offer terms each having a respective second value. The invention operates to determine for each of the plurality of offer terms a corresponding unacceptable similarity range, and to compare the respective first values with the respective second values for each of the offer terms. If the respective first and second values for at least of the plurality of offer terms fall within the unacceptable similarity range, a first selected process is performed on the second offer. For example, the offer may be rejected, taxed, or otherwise processed so as to discourage pinging. If the respective first and second values for the plurality of offer terms fall outside of the unacceptable similarity range, a second selected process is performed on the second offer. For example, the offer may be processed in an effort to identify a willing and able seller, in a conventional manner.

(57) Abrégé

L'invention concerne un système et un procédé de traitement d'offres d'acheteurs concernant des produits, le système permettant de réduire les cas d'offres similaires et répétées qui permettent aux acheteurs _d'effectuer un sondage_ pour déterminer un prix minimal confidentiel pour ces produits. Dans un mode de réalisation, un acheteur soumet une première offre, cette première offre comprenant plusieurs modalités possédant chacune une première valeur respective. La même partie soumet ensuite une deuxième offre, la deuxième offre comprenant généralement la même série de modalités possédant chacune une deuxième valeur respective. L'invention permet de déterminer pour chaque série de modalités une gamme de similarité inacceptable et de comparer les premières valeurs respectives avec les deuxièmes valeurs respectives de chaque modalité. Si les premières et deuxièmes valeurs respectives d'au moins une des séries de modalités se trouve dans la gamme de similarité inacceptable, on soumet la deuxième offre à un premier traitement sélectionné. Par exemple, l'offre peut être rejetée, assujettie à l'impôt ou soumis à un autre traitement de prévention de _sondage_. Si les premières et deuxièmes valeurs respectives de la série de modalités ne se trouvent pas dans la gamme de similarité inacceptable, on soumet la deuxième offre à un deuxième traitement sélectionné. Par exemple, on peut traiter l'offre pour essayer d'identifier de manière classique un vendeur sérieux et habile.

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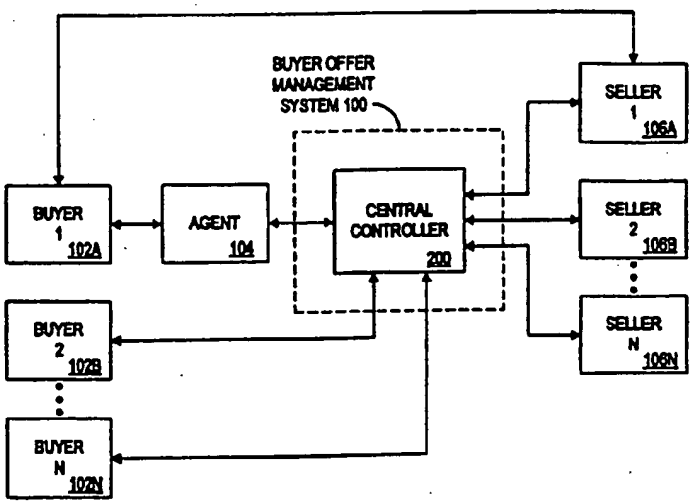

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Description

METHOD AND APPARATUS FOR DETECTING AND DETERRING THE SUBMISSION OF SIMILAR OFFERS IN A COMMERCE SYSTEM

The present application is a continuation-in-part of U.S. Patent Application Serial No. 09/205,824 filed December 04, 1998, which is a continuation-in-part of U.S. Patent Application Serial No. 08/943,483 filed October 03, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/923,683 filed September 04, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/889,319, filed July 8, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/707,660, filed September 4, 1996, now issued U.S. patent no. 5,794,207, each of which is incorporated in its entirety by reference herein.

Field of the Invention

The present invention relates generally to commerce systems, and more particularly to a commerce system that discourages buyers from submitting repetitive offers for a product to determine a selling price.

Background of the Invention

Most conventional systems for selling products are seller-driven commerce systems, wherein a seller establishes conditions, including price, for the sale of a product, and buyers determine whether or not to purchase that product. Examples of seller-driven commerce systems include conventional retail systems, both in a traditional store environment, and in an electronic environment as established on the Internet. Amazon.com, for example, is representative of a traditional seller-driven commerce system, i.e. a bookstore, that has been implemented electronically on the Internet. It is the applicant's belief that the vast majority of consumer sales are transacted using the seller-driven model.

A heretofore less common method of selling products is buyer-driven commerce, where a buyer creates an offer setting the terms and conditions of a potential purchase. The buyer offer is made available to many sellers, for example through a

paper or electronic 'want ad,' and interested sellers may contact the buyer to complete the transaction.

While much infrastructure has long been established to support seller-driven commerce, buyer-driven commerce represents a somewhat newer, lesser used type of commerce having much less supporting infrastructure. Prior to the existence of electronic networks such as the Internet, and certain business models developed thereunder, applicant's believe no cost-effective infrastructure existed for supporting buyer-driven commerce systems. Facilities for supporting seller-driven commerce include, for example, highly-effective advertising channels, automated payment processing systems, established and readily available fulfillment systems, and other similar facilities for supporting steps of the seller-driven sales process. In contrast, many of the analogous facilities necessary to support buyer-driven commerce do not exist on the same established, economically feasible and effective scale.

Communications and advertising channels through which buyers may reach sellers are not, for example, as well established and effective as are the communications and advertising channels available for sellers to reach buyers. Similarly, it is typically more difficult and time-consuming for a seller to contact a buyer, consummate a transaction, and collect a payment based on a buyer-driven offer, than it is for a seller to perform these same functions in a more traditional seller-driven commerce environment. The development of electronic networks, as well as the invention of new commerce models and infrastructures using these networks, have moved towards making the process of buyer-driven commerce more practical and economically feasible on a large-scale basis.

Priceline.com Incorporated of Stamford, CT is a merchant that has successfully implemented a buyer-driven commerce system for the sale of products such as airline tickets, hotel accommodations, and automobiles. Priceline.com utilizes a Conditional Purchase Offer (CPO) Management System, described in U.S. Patent No. 5,794,207 and International Application Number PCT/US97/15492, that processes buyer-generated conditional purchase offers (CPOs) received from individual consumers. These CPOs contain one or more buyer-defined conditions for the purchase of goods or services, at a buyer-defined price. They may be guaranteed by a general purpose account, such as a debit or credit card account, thereby providing sellers with a mechanism for collecting payments on accepted CPOs. The CPO Management System

operates to automatically process CPOs for potential fulfillment by a seller. Automated processing systems developed by priceline.com make the buyer-driven commerce system cost-effective on a large scale. The potential to receive customer offers backed by credit cards, i.e. "guaranteed demand", makes the system very effective for sellers. If a seller accepts a CPO, the CPO Management System may bind the buyer on behalf of the accepting seller, to form a legally binding contract between the parties.

The CPO Management System thus empowers individual consumers to obtain goods and services at their own specified prices. The CPO Management System provides numerous commercial advantages to sellers as well. For example, certain features of the system, including anonymity and data security, enable the seller to adjust his price and terms to meet a consumer offer without publicly undercutting his own retail price structure. This enables the seller to identify and accept incremental, price-sensitive sales in a manner not typically feasible through a conventional retail process.

In many implementations of the above-described buyer-driven commerce system, it is important that a seller's lowest price, or floor price, remain a secret from the buyer. If the general buyer population discovers the seller's floor price, then there is no incentive for any buyer to offer a reasonable price for those products. Every buyer will eventually offer only the floor price, the seller's traditional retail prices and distribution channels will be undercut, and that seller may suffer or fail in the marketplace. Further, public knowledge of a seller's floor price will enable his competitors to determine his profit margins on particular goods, providing his competitors with an unfair advantage and an opportunity to undercut his position in the market.

One problem foreseen by the inventors is the likelihood that buyers (including competitors) may attempt to determine a seller's lowest price is to 'ping' the system by submitting repetitive offers to the system with incrementally increasing prices. For example, if a buyer believes a seller's floor price to be in the range of ten to fifteen dollars for a particular product, he may submit a first offer at nine dollars. If that offer is rejected, he would then submit subsequent offers, increasing the offer price incrementally (for example by one dollar), until an offer is accepted. At that time, the buyer knows the seller's lowest price, and may communicate that price to competitors and to other potential buyers.

The present inventors have thus determined that, in order for at least some methods of buyer-driven commerce to operate successfully, it is necessary to develop methods and systems for preventing buyers from determining lowest available seller prices. It is particularly desirable to prevent buyers from pinging the system to make such a determination.

Summary of the Invention

A principle object of the present invention is to provide a system and method whereby buyer users of a buyer-driven commerce system are effectively discouraged from submitting repetitive offers in an effort to determine a lowest seller price for a particular product.

In accordance with a first embodiment of the present invention, there is provided a system and method of processing offers for the purchase of products, the method comprising the steps of: receiving from a party at least first and second offers for a product; comparing the first and second offers; and if the first and second offers fall within a predetermined range of similarity, then performing a first selected process on at least one of the first and second offers.

In accordance with another aspect of the invention, there is provided a system and method of processing offers for the purchase of products, the method comprising the steps of: receiving from a party a first offer, the first offer including a plurality of offer terms each having a respective first value; receiving from the party a second offer, the second offer including the plurality of offer terms each having a respective second value; determining for each of the plurality of offer terms a corresponding unacceptable similarity range; comparing the respective first values with the respective second values for each of the offer terms; and performing, if the respective first and second values for at least one of the plurality of offer terms fall within the unacceptable similarity range, a first selected process on the second offer.

In accordance with yet another embodiment of practicing the invention, there is provided a system and method of processing offers for the purchase of products, the method comprising the steps of: receiving from a party a first conditional purchase offer, the first conditional purchase offer including a plurality of offer terms each having a respective first value; receiving from the party a second conditional purchase offer, the second conditional purchase offer including the plurality of offer terms each having a

respective second value; the plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use the payment identifier to pay the purchase price; determining for each of the plurality of offer terms an unacceptable similarity range; comparing the respective first values with the respective second values for each of the offer terms; if the respective first and second values for at least one of the plurality of offer terms fall within the unacceptable similarity range, performing a first process on the second offer; and if the respective first and second values for the plurality of offer terms do not fall within the unacceptable similarity range, performing a second process on the second offer.

Brief Description of the Drawing Figures

These, and other objects, features and advantages of the invention will become apparent from a consideration of the detailed description below, in which:

Fig. 1 is a block diagram of a CPO Management System in accordance with the invention;

Fig. 2 is a block diagram of the central controller of Fig. 1;

Fig. 3 is a table showing the data contents of an exemplary seller database;

Fig. 4 is a table showing the data contents of an exemplary buyer database;

Fig. 5 is a table showing the data contents of an exemplary buyer offer database;

Fig. 6A is a table showing the data contents of an exemplary offer similarity range database;

Fig. 6B is a table showing the data contents of an exemplary unacceptable similarity rules database;

Figs. 7A&B together show a flow chart showing an exemplary rules evaluation process; and

Fig. 8 is a flow chart showing an exemplary CPO evaluation process.

Detailed Description of the Invention

The present invention has application in the field of buyer-driven commerce, used herein to described methods of commerce wherein buyers assemble and submit offers to sellers, the sellers having the opportunity to consider and fill the offer. Fulfillment typically occurs after discussions with the buyer, during which payment

mechanisms and fulfillment terms (i.e. delivery) are agreed to. One traditional method of buyer-driven commerce is the 'want ad,' which may be implemented today both electronically and in paper publications.

The present invention is operative to discourage buyer efforts to determine confidential price floors set by sellers. The invention is particularly effective in discouraging "pinging," used herein to describe a method whereby users of a system repetitively interact with that system in order to determine confidential information relating to the system. Such interactions can be on a large-scale basis, for example in the millions of interactions, in attempts to determine cryptographic protocols. The present invention is particularly concerned with the submission of repetitive buyer offers to a buyer-driven commerce system in order to attempt to determine a confidential price floor of a seller.

An important subset of buyer-driven commerce is the priceline.com model using conditional purchase offers (CPOs). A conditional purchase offer is a buyer offer that contains at the least a buyer-specified condition for the purchase of a product, and a buyer-specified price. A conditional purchase order desirably has some financial obligation on the part of the buyer associated with it, for example a penalty for failure to execute on an offer accepted by a seller. A conditional purchase offer may also be binding, wherein a buyer at the time of offer commits to pay his offer price if a seller accepts the offer. Binding CPOs are typically guaranteed with a financial account identifier, for example a credit or debit card account number. The inclusion of a payment guarantee raises the buyer offer, or demand unit, to the level of "guaranteed demand," making the offer less risky and hence more cost-effective for a seller to consider.

Other features that are applicable to the CPO model include the provision of anonymity to a seller, and the provision of flexible terms and conditions in the buyer's CPO. By making the seller's identity anonymous, at least until the seller accepts an offer, sellers may participate in the system with a much diminished concern about undercutting their own retail structure. By requiring the buyer offer to include flexible terms, terms that may be specified by the seller (i.e. delivery date, quality, brand name, etc...), the seller is again given the ability to fill the offer with lessened concern about undercutting their own retail structure.

Referring now to Fig. 1, there is shown a buyer offer management system 100 including a central controller 200 for communicating buyer offers and buyer offer-related information with a plurality of buyers 102A-102N, and communicating buyer offer and seller acceptance-related information with a plurality of sellers 106A-106N. Buyer offers and related information may be communicated by any appropriate means, for example, through an electronic network, by telephone, or by mail. Buyer offers may be received directly from a buyer, or through an agent 104 on behalf of a buyer, the agent shown herein as operating with buyer 102A.

In the described embodiment, buyers communicate with central controller 200 electronically via the Internet, and the central controller in turn communicates with sellers through an appropriate electronic data interface. Buyers 102A-102N would thus communicate with central controller 200 using an appropriate electronic terminal, for example a personal computer. Sellers 106A-106N likewise communicate with the central controller 200 through an appropriate computer, for example a personal computer, a server, or a main-frame computer. As will be discussed further below, selected sellers receive buyer offers directly from central controller 200, while other sellers provide agency-based rules for use by the central controller to itself evaluate buyer offers on behalf of such sellers.

With reference now to Fig. 2, central controller 200 is seen to comprise a generally conventional computer, including a central processing unit (CPU) 202 connected to random access memory 204, read-only memory 206, and a clock 208. CPU 202 is further connected to a communications port 210, such as a modem or a network interface, and a storage device 212. Storage device 212 can comprise, for example, a conventional combination of magnetic, optical, and/or semiconductor memory.

In accordance with the present invention, storage device 212 is seen to include a seller database 300, a buyer database 400, an offer database 500, an offer term database 600, and an unacceptable similarity rules database 650, each of which is described in further detail below. Storage device 212 further includes software instructions for performing a rules evaluation process 700 and an offer evaluation process 800, each of which are also described in further detail below. Central controller 200 further includes those standard hardware and software components necessary to the operation of a computer, as are well known to those of ordinary skill in the art.

Referring now to Fig. 3, seller database 300 is seen to include four data records, indicated at 300A-300D. Each data record includes four data fields: a seller identifier field 302 containing an identifier assigned by central controller 200, a seller name field 304 including an alpha-numeric seller name, a seller contact information field 306 indicating an address or other method of communicating information with a seller, and a seller agent status field 308 indicating whether the seller has provided rules for local evaluation of a buyer offer by the central controller. Examining, for example, record 300A, Airline 1 is seen to be associated with identifier 1231 and to have an electronic contact address of 'E-ADDRESS#1'. The seller agent status is "no," indicating the seller has not provided rules for local evaluation of buyer offers, and is thus to have direct access to buyer offers in the manner described below. In contrast, Airline 2 as identified in data record 300B is seen to have provided buyer offer evaluation rules, which are available for use at a local database address "DBASE-ADDRESS#2." Though not shown, an external contact address or information may also be provided for Airline 2.

With reference now to Fig. 4, there is shown buyer database 400 including two data records 402A, 402B, each including four fields: a buyer identifier field 404 including an identifier either generated by central controller 200 or provided by a buyer (e.g. a social security number), a financial account identifier field 406 including a financial account identifier such as a credit or debit card number provided by the buyer, a buyer name field 408, and a contact information field 410 including buyer contact information. Examining, for example, record 402A, buyer Joe Smith is seen to have been assigned identifier 4567, to have provided credit card number 1111-1111-1111-1111 as a financial account identifier, and to have an electronic mail address of smith@isp.com.

Referring now to Fig. 5, buyer offer database 500 is seen to include three data records 502A-502C. Each record is seen to include six data fields: a buyer offer identifier field 504 generated by central controller 200, a buyer identifier field 506 which corresponds to the buyer identifier in buyer database 400, a buyer offer conditions field 508 including conditions specified by the buyer, a price field 510 including a buyer-specified price, a submission date/time field 512 including the submission date of the buyer offer, and an expiration date/time field 514 including any buyer offer expiration date assigned by central controller 200 or by the buyer.

Examining, for example, data record 502A, buyer offer "1" is seen to correspond to buyer "4567." The conditions are for an airline ticket: round-trip from New York to Los Angeles, leaving on "1/15/98" and returning on "1/19/98." The buyer-specified offer price is "$200," the date of submission of the buyer offer is "1/1/98," and the expiration date is "1/14/98." It is to be noted that data record 502B includes a second offer by the same buyer, this second offer having a changed departure date, price, and expiration date.

With reference now to Fig. 6A, offer term database 600 stores unacceptable similarity ranges for selected offer terms, and is seen to include five records 602A-602E, each including three fields: an identifier field 603 constituting an index assigned by the system, a buyer offer characteristic field 604 including data identifying a buyer offer term, and a term similarity range field 606 containing a range for the corresponding term within which similar buyer offers may, in accordance with the rules described below, be rejected or differently processed. Examining, for example, data record 602A, it is seen that identifier "001" indexes buyer offer dates (field 604) submitted within two days of one-another (field 606).

Referring now to Fig. 6B, unacceptable similarity rules database 650 identifies selected combinations of term similarity ranges from database 600 which together are used to identify types of buyer offers which are to be rejected or otherwise differently processed. Database 650 is seen to include four records, 652A-D, each including two fields: a rule identifier field 654 constituting a rule number assigned by the system, and a term similarity range identifiers field 656 identifying, in Boolean logic format, what combination of term similarity ranges from field 606 of database 600 comprise an unacceptable buyer offer. That is, term similarity range identifiers 656 are used, in accordance with the processes set out and described below, to identify those buyer offers which are similar in nature and thus are likely to be operative to ping the system to identify price floors, so that such similar offers can be rejected or otherwise separately processed.

Examining in detail the rules set out in database 650, the rules identified in record 652A for identifier 001 are seen to identify a Boolean combination of terms from database 600. More specifically, the similarity range identifiers in this first rule are seen to identify the following combination of fields: 602C (and) 602B (and) 602E as constituting an unacceptable offer. Considering the corresponding term similarity range

information from database 600, rule "001" is seen to identify offers that have: identical buyer identifiers (and) offers within $50.00 of one-another, (and) the same city pair. The remaining rules from database 650 are similarly examined in Table 1 below.

Unacceptable Rule Identifier	Term Similarity Range Identifiers
002	identical payment identifiers (and) prices within $50.00 (and) same city
003	(identical buyer identifiers (or) identical payment identifiers) (and) (same city pairs (and) offers received within two days of one-another)
004	(identical buyer identifiers (or) identical payment identifiers) (and) (offer prices within $50.00 (and) same city pairs)

TABLE 1

For purposes of illustration and explanation, other combinations of offer terms that may identify system pings include, without limitation, two offers that are unacceptably similar in the range of: 1) dates and offer prices, 2) for an airline ticket, dates and itineraries, 3) for consumer products, offer prices and product specifications, 4) for consumer products, offer prices and brand specifications, 5) for hotel room accommodations, dates and locations, 6) for hotel room accommodations, locations and offer prices, 7) for financial products, financial terms and offer prices, 8) for airline tickets, date, itinerary and offer price, 9) for hotels, date, location, and offer price, 10) for hotels, date, location, offer price, and hotel rating, etc. It will be apparent to those skilled in the art that many different combinations of terms may be identified which would indicate that two related offers are functional to determine a confidential price floor, and upon the occurrence of unacceptably similar ranges for those terms, the second offer should be processed by an alternative process.

Referring now to Fig. 7A, a process 700 for utilizing the similarity rules in database 650 to determine how to process a buyer offer is shown, the first step 702 comprising receiving a buyer offer for processing. As described with respect to Fig 1, in the present embodiment, the buyer offer is received into central controller 200 through an Internet communication. The buyer offer may include, for example, product specifications, fulfillment terms and conditions, and/or an offer price. It will be understood that the content of the buyer offer is particularly relevant to the present

invention in its relation to previously submitted offers, more so than to the absolute contents of a particular offer. It will be further understood that, in the described embodiment, it is a rule requirement that compared offers are by the same buyer. As described above, this same buyer requirement is not necessary to all applications of the present invention.

The information contained in the received buyer offer is used to create a buyer record in buyer database 400 (step 704) and an offer record in offer database 500 (step 706). A search is then made of the buyer and offer databases to determine if a previous offer has been received from the same buyer (step 708).

It will be understood that one purpose of the present invention is to prevent pinging by a buyer(s) to determine a seller price floor. Accordingly, the terms "buyer," and/or "party," and/or equivalents, when used to refer to an entity capable of pinging the system to determine pricing information, may be identified in many different ways, including: the same (or a recognizably similar variation of) a: name, address, financial account identifier, telephone number, and/or geographic location (as may be determined, for example, by a global positioning system, telephone number, zip code, or the like). Other criteria for determining the existence of the "same" buyer may include the existence of a central controller-placed 'cookie' on a buyer's computer, and in appropriate circumstances similar offer terms and conditions such as product amenities, dates of offers, and/or price. Again, it will be understood that for the purpose of the present invention, a "buyer" is an entity who might repetitively ping central controller 200 to determine a floor price.

Many other criteria will be apparent to those skilled in the art by which such a buyer may be identified. It will be seen that, for purposes of illustration and explanation, two "same buyer" identifiers are set out in database 600: the same buyer identifier in field 602C, which may comprise, for example, the same buyer name or same buyer account identifier, and the same payment identifier as set out in field 602D, for example the same credit card account number.

If no previous offer has been received from the same buyer (step 710), the buyer offer is processed conventionally according to the steps set out in Fig. 8, described below (step 712).

If a previous offer has been received from the same buyer (step 710), then the rules in the similarity rules database are used to determine if the newly received

offer is unacceptably similar in scope to the previous offer. This process is initiated by comparing the terms of the newly received offer to the terms of the previously received offer (step 714).

With reference now to Fig. 7B, for each offer, the difference between the current offer terms (excepting the buyer identifiers, which have been compared above) and the previous offer terms is determined (step 716). For purposes of explanation, if the terms being compared are price, the monetary difference between the prices of the current and previous offers are calculated. If the terms being compared are the buyer-requested date of service, the length of time between term dates is calculated. If product brands are specified, the product brand terms may be compared to determine if the specified brand has been altered. Appropriate difference ranges are determined for all selected offer terms, which may further include: offer dates, product specifications, fulfillment terms and conditions, specifications of selected sellers, etc.

For each buyer offer, the term similarity range identifiers, in Boolean form, are retrieved from field 656 of database 650, and used to retrieve the corresponding term similarity range data from field 606 of database 600 (step 718). This retrieved range data is used to construct the unacceptable similarity rule for the particular offer (step 719). It will be understood that different unacceptable similarity rules may be used for different business circumstances, depending on the particular rule identifier selected to index a record in database 650. Such decisions are to be determined by the system operator, and may be based on, for example, types of products being sold and/or business goals of the system operator and/or sellers. The actual difference between the current and previous offer terms are then compared to the unacceptable similarity rule data (step 720). If the actual offer term difference is outside of the unacceptable similarity rule range (step 722), i.e. the current offer is acceptable and not identified as a ping, then the current buyer offer is processed conventionally (step 726).

If the buyer offer test at step 722 is determined as having an unacceptable similarity to a previous offer, i.e. the offer term differences fall within the unacceptable similarity rule, then an alternate process is selected for the current buyer offer (step 728). In the described embodiment, the alternate process is to reject the current offer, thereby preventing pinging. It will be understood that other alternate processes may be selected which will also prevent or discourage pinging, such as: charging a surcharge to

process the current offer, providing a warning to the buyer that this is the last similar offer that will be processed, and/or suspending future privileges of the buyer to use the system. Many other methods of processing such an offer while discouraging and preventing pinging will now be apparent to those of ordinary skill in the art.

With reference now to Fig. 8, a conventional process is shown for processing buyer offers that do not include unacceptably similar terms as determined by the similarity rules process 700 described above. To initiate process 800, a buyer offer is identified for conventional processing (step 802). That buyer offer is made available to remote sellers (also termed 'broadcast-based' sellers) (step 804) and compared to rules provided by rules-based sellers (also termed 'agency-based' sellers) (step 806). The step of making such an offer available to remote sellers may include, for example, transmitting the offer to the remote sellers electronically or by paper, and/or making the offer available for viewing by remote sellers, such as on an Internet website. The step of comparing such an offer to rules includes comparing the terms of the offer to rules of acceptance provided by a seller(s) for local processing and acceptance. Such rules, for example, may be collected and stored in a database in central controller 200.

It is next determined if any seller accepts the buyer offer (step 808). If neither of steps 804 or 806 identify an accepting seller, then the buyer is notified with a rejection of the offer (step 810). If an acceptance by a seller is identified in step 808, then the accepting seller is identified (step 812) and provided with the necessary buyer data (step 814). The buyer is likewise notified (step 816) of the acceptance, and provided necessary information relating to the seller.

There has thus been provided a new and improved method and system for processing buyer offers in a commerce system, and particularly in a buyer-driven commerce system, which discourages and/or prevents buyer pinging (i.e. the submission of multiple similar offers) to determine a seller floor price. The invention has application in buyer-driven commerce systems, and particularly in systems such as those provided by priceline.com. The invention is flexible enough to detect many different types of potential pinging strategies, and can be implemented so that it does not require undue resources.

While the present invention has been shown and described with respect to specific embodiments, it is not thus limited. Numerous modifications, changes and

improvements falling within the scope of the invention will occur to those skilled in the art.

Claims

What is claimed is:

1. A method of processing offers for the purchase of products, comprising the steps of:

receiving from a party at least first and second offers for a product;

comparing said first and second offers; and

if said first and second offers fall within a predetermined range of similarity, then performing a first selected process on at least one of said first and second offers.

2. A method in accordance with claim 1 and further including the step of, if said first and second offers do not fall within a predetermined range of similarity, then performing a second selected process on at least one of said first and second offers.

3. A method in accordance with claim 1 and further including the steps of:

storing a plurality of similarity rules, each similarity rule containing information relating to a particular term of said first and second offers; and

said comparing step including retrieving and using at least one of said plurality of similarity rules to compare said first and second offers.

4. A system for processing offers for the purchase of products, comprising:

means for receiving from a party at least first and second offers for a product;

means for comparing said first and second offers; and

means, if said first and second offers fall within a predetermined range of similarity, for performing a first selected process on at least one of said first and second offers.

5. A system in accordance with claim 4 and further including means, if said first and second offers do not fall within a predetermined range of similarity, for performing a second selected process on at least one of said first and second offers.

6. A system in accordance with claim 4 and further including:

means for storing a plurality of similarity rules, each similarity rule containing information relating to a particular term of said first and second offers; and

said comparing means including means for retrieving and using at least one of said plurality of similarity rules to compare said first and second offers.

7. A system for processing offers for the purchase of products, comprising:

a processor;

a memory connected to said processor and storing instructions for controlling said processor, said processor operative with said instructions to

receive from a party at least first and second offers for a product;

compare said first and second offers; and

if said first and second offers fall within a predetermined range of similarity, then perform a first selected process on at least one of said first and second offers.

8. A system in accordance with claim 7 said processor further operative, if said first and second offers do not fall within a predetermined range of similarity, to perform a second selected process on at least one of said first and second offers.

9. A system in accordance with claim 7 wherein:

said memory further stores a plurality of similarity rules, each similarity rule containing information relating to a particular term of said first and second offers; and

said processor further operative to retrieve and use at least one of said plurality of similarity rules to compare said first and second offers.

10. A computer readable medium storing instructions for controlling a computer to process offers for the purchase of products, comprising:

a program instruction for receiving from a party at least first and second offers for a product;

a program instruction for comparing said first and second offers; and

a program instruction for performing a first selected process on at least one of said first and second offers if said first and second offers fall within a predetermined range of similarity.

11. A method of processing offers for the purchase of products, comprising the steps of:

receiving from a party a first offer, said first offer including a plurality of offer terms each having a respective first value;

receiving from said party a second offer, said second offer including said plurality of offer terms each having a respective second value;

determining for each of said plurality of offer terms a corresponding unacceptable similarity range;

comparing said respective first values with said respective second values for each of said offer terms; and

performing, if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, a first selected process on said second offer.

12. A method in accordance with claim 11, and further including the step of, if said respective first and second values for said plurality of offer terms fall outside of said unacceptable similarity range, performing a second selected process on said second offer.

13. A method in accordance with claim 12, said determining step including the step of retrieving a stored similarity rule containing an offer term identifier and an unacceptable similarity range corresponding to said offer term identifier.

14. A method in accordance with claim 13 wherein said comparing step includes comparing the respective differences between said first values and said second values of said offer terms to said unacceptable similarity ranges of said similarity rules.

15. A method in accordance with claim 11 wherein said party is identified by at least one characteristic selected from the group comprising a name, a telephone

number, a financial account number, a geographic location, an address, and an electronic mail address.

16. A method in accordance with claim 11wherein said performing step is conditional upon, said respective first and second values for at least two of said plurality of offer terms falling within said unacceptable similarity range.

17. A method in accordance with claim 16 wherein said plurality of offer terms are selected from the group comprising price, date, quantity, quality, brand, and product specifications.

18. A system for processing offers for the purchase of products, comprising:

a processor;

a memory connected to said processor and storing instructions for controlling said processor, said processor operative with said instructions to

receive from a party a first offer, said first offer including a plurality of offer terms each having a respective first value;

receive from said party a second offer, said second offer including said plurality of offer terms each having a respective second value;

determine for each of said plurality of offer terms a corresponding unacceptable similarity range;

compare said respective first values with said respective second values for each of said offer terms; and

perform, if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, a first selected process on said second offer.

19. A system in accordance with claim 18, said processor further operative, if said respective first and second values for said plurality of offer terms fall outside of said unacceptable similarity range, to perform a second selected process on said second offer.

20. A system in accordance with claim 19, said processor further operative in said determining step to retrieve a stored similarity rule containing an offer term identifier and an unacceptable similarity range corresponding to said offer term identifier.

21. A system in accordance with claim 20 wherein said processor is further operative in said comparing step to compare the respective differences between said first values and said second values of said offer terms to said unacceptable similarity ranges of said similarity rules.

22. A system in accordance with claim 18 wherein said party is identified by at least one characteristic selected from the group comprising a name, a telephone number, a financial account number, a geographic location, an address, and an electronic mail address.

23. A system in accordance with claim 18 wherein said performing operation is conditional upon said respective first and second values for at least two of said plurality of offer terms falling within said unacceptable similarity range.

24. A system in accordance with claim 23 wherein said plurality of offer terms are selected from the group comprising price, date, quantity, quality, brand, and product specifications.

25. A system for processing offers for the purchase of products, comprising:

means for receiving from a party a first offer, said first offer including a plurality of offer terms each having a respective first value;

means for receiving from said party a second offer, said second offer including said plurality of offer terms each having a respective second value;

means for determining for each of said plurality of offer terms a corresponding unacceptable similarity range;

means for comparing said respective first values with said respective second values for each of said offer terms; and

means for performing, if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, a first selected process on said second offer.

26. A computer readable medium storing instructions for controlling a computer to process offers for the purchase of products, comprising:

a program instruction for receiving from a party a first offer, said first offer including a plurality of offer terms each having a respective first value;

a program instruction for receiving from said party a second offer, said second offer including said plurality of offer terms each having a respective second value;

a program instruction for determining for each of said plurality of offer terms a corresponding unacceptable similarity range;

a program instruction for comparing said respective first values with said respective second values for each of said offer terms; and

a program instruction for performing, if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, a first selected process on said second offer.

27. A method of processing offers for the purchase of products, comprising the steps of:

receiving from a party a first conditional purchase offer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

receiving from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

determining for each of said plurality of offer terms an unacceptable similarity range;

comparing said respective first values with said respective second values for each of said offer terms;

if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, performing a first process on said second offer; and

if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, performing a second process on said second offer.

28. The method of claim 27 wherein said step of performing a second process comprises transmitting said second offer to a plurality of sellers.

29. The method of claim 27 wherein said step of performing a second process comprises querying a database to determine seller information.

30. The method of claim 27 wherein said step of performing a first process comprises rejecting said second offer.

31. The method of claim 27 wherein said step of performing a first process comprises using said payment identifier to charge said party a fee for processing said second offer.

32. A method in accordance with claim 27, said determining step including the step of retrieving a stored similarity rule containing an offer term identifier and an unacceptable similarity range corresponding to said offer term identifier.

33. A method in accordance with claim 32 wherein said comparing step includes comparing the respective differences between said first and second values of said offer terms to said unacceptable similarity ranges of said similarity rules.

34. A method in accordance with claim 27 wherein said party is identified by at least one characteristic selected from the group comprising a name, a telephone

number, a financial account number, a geographic location, an address, and an electronic mail address.

35. A method in accordance with claim 27 wherein said step of performing a first process is conditional upon said respective first and second values for at least two of said plurality of offer terms falling within said unacceptable similarity range.

36. A method in accordance with claim 35 wherein said plurality of offer terms are selected from the group comprising price, date, quantity, quality, brand, and product specifications.

37. A system for processing offers for the purchase of products, comprising:

a processor;

a memory connected to said processor and storing instructions for controlling said processor, said processor operative with said instructions to

receive from a party a first conditional purchase offer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

receive from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

determine for each of said plurality of offer terms an unacceptable similarity range;

compare said respective first values with said respective second values for each of said offer terms;

if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, perform a first process on said second offer; and

if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, perform a second process on said second offer.

38. The system of claim 37 wherein said operation of performing a second process comprises transmitting said second offer to a plurality of sellers.

39. The system of claim 38 wherein said operation of performing a second process comprises querying a database to determine seller information.

40. The system of claim 37 wherein said operation of performing a first process comprises rejecting said second offer.

41. The system of claim 37 wherein said operation of performing a first process comprises using said payment identifier to charge said party a fee for processing said second offer.

42. A system in accordance with claim 37, said determining operation including the operation of retrieving a stored similarity rule containing an offer term identifier and an unacceptable similarity range corresponding to said offer term identifier.

43. A system in accordance with claim 42 wherein said comparing operation includes comparing the respective differences between said first and second values of said offer terms to said unacceptable similarity ranges of said similarity rules.

44. A system in accordance with claim 37 wherein said party is identified by at least one characteristic selected from the group comprising a name, a telephone number, a financial account number, a geographic location, an address, and an electronic mail address.

45. A system in accordance with claim 37 wherein said operation of performing a first process is conditional upon said respective first and second values for

at least two of said plurality of offer terms falling within said unacceptable similarity range.

46. A system in accordance with claim 45 wherein said plurality of offer terms are selected from the group comprising price, date, quantity, quality, brand, and product specifications.

47. A system for processing offers for the purchase of products, comprising:

means for receiving from a party a first conditional purchase offer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

means for receiving from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

means for determining, for each of said plurality of offer terms, an unacceptable similarity range;

means for comparing said respective first values with said respective second values for each of said offer terms;

means for, if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, performing a first process on said second offer; and

means for, if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, performing a second process on said second offer.

48. A computer readable medium storing instructions for controlling a computer to process offers for the purchase of products, comprising:

a program instruction for receiving from a party a first conditional purchase offer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

a program instruction for receiving from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

a program instruction for determining for each of said plurality of offer terms an unacceptable similarity range;

a program instruction for comparing said respective first values with said respective second values for each of said offer terms;

a program instruction for, if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, performing a first process on said second offer; and

a program instruction for, if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, performing a second process on said second offer.

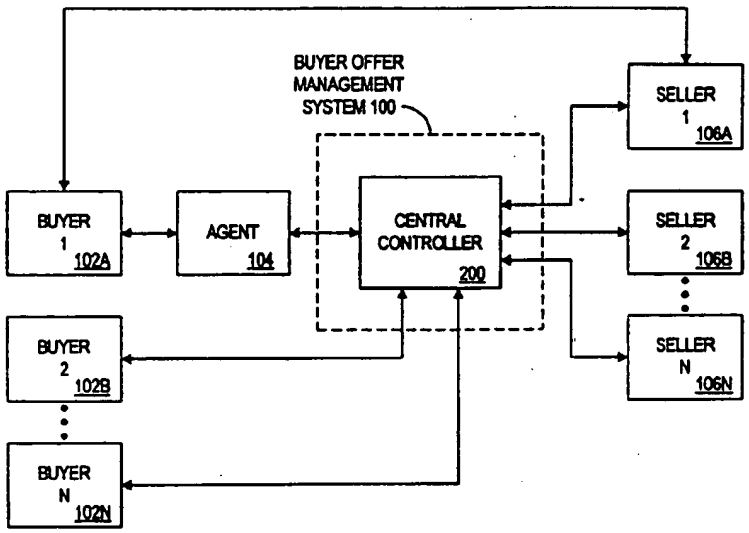
BUYER OFFER
MANAGEMENT
SYSTEM 100
BUYER
1
102A
AGENT
104
CENTRAL
CONTROLLER
200
SELLER
1
106A
SELLER
2
106B
SELLER
N
106N
BUYER
2
102B
BUYER
N
102N

FIG. 1

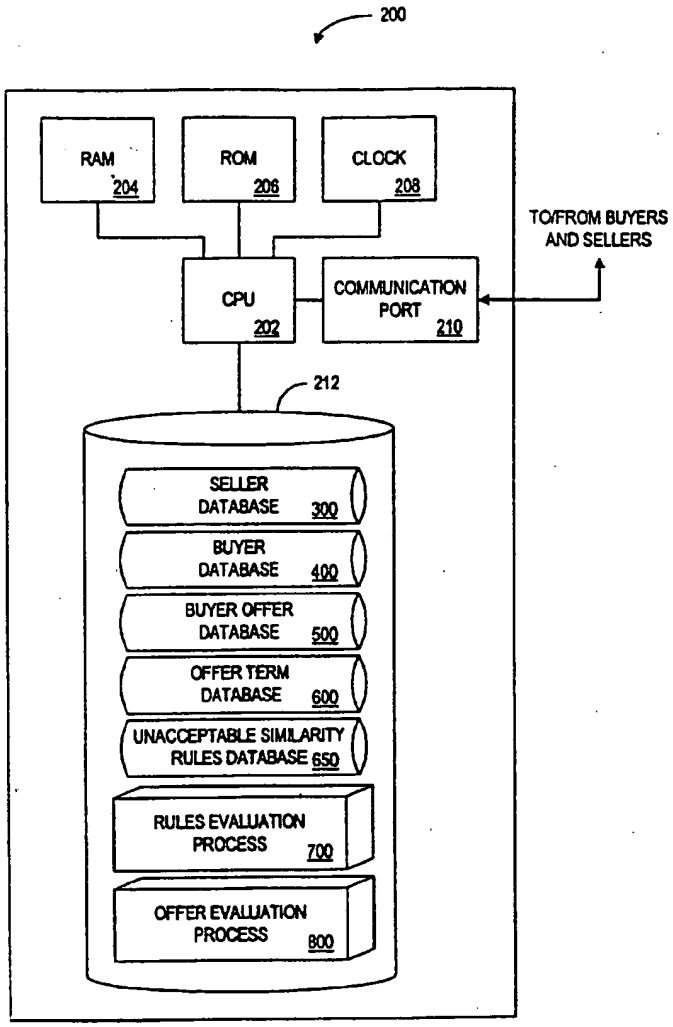
200
RAM
204
ROM
206
CLOCK
208
TO/FROM BUYERS AND SELLERS
CPU
202
COMMUNICATION PORT
210
212
SELLER DATABASE 300
BUYER DATABASE 400
BUYER OFFER DATABASE 500
OFFER TERM DATABASE 600
UNACCEPTABLE SIMILARITY RULES DATABASE 650
RULES EVALUATION PROCESS 700
OFFER EVALUATION PROCESS 800

FIG. 2

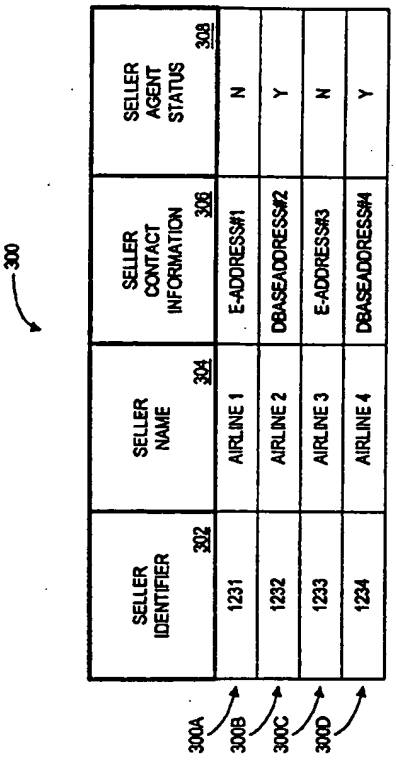
300
SELLER IDENTIFIER 302
SELLER NAME 304
SELLER CONTACT INFORMATION 306
SELLER AGENT STATUS 308
1231
AIRLINE 1
E-ADDRESS#1
N
1232
AIRLINE 2
DBASEADDRESS#2
Y
1233
AIRLINE 3
E-ADDRESS#3
N
1234
AIRLINE 4
DBASEADDRESS#4
Y
300A
300B
300C
300D

FIG. 3

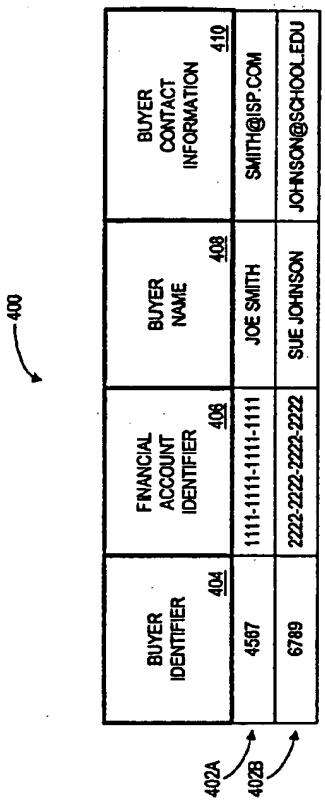
400
BUYER IDENTIFIER 404
FINANCIAL ACCOUNT IDENTIFIER 406
BUYER NAME 408
BUYER CONTACT INFORMATION 410
4567
1111-1111-1111-1111
JOE SMITH
SMITH@ISP.COM
6789
2222-2222-2222-2222
SUE JOHNSON
JOHNSON@SCHOOL.EDU
402A
402B

FIG. 4

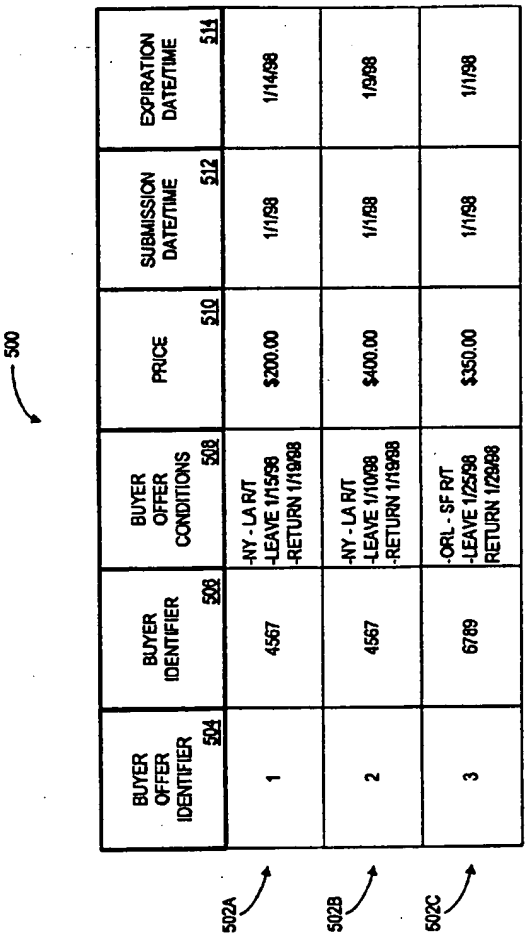
500
BUYER OFFER IDENTIFIER 504
BUYER IDENTIFIER 506
BUYER OFFER CONDITIONS 508
PRICE 510
SUBMISSION DATE/TIME 512
EXPIRATION DATE/TIME 514
1
4567
-NY - LA R/T
-LEAVE 1/15/98
-RETURN 1/19/98
$200.00
1/1/98
1/14/98
2
4567
-NY - LA R/T
-LEAVE 1/10/98
-RETURN 1/19/98
$400.00
1/1/98
1/9/98
3
6789
-ORL - SF R/T
-LEAVE 1/25/98
RETURN 1/29/98
$350.00
1/1/98
1/1/98
502A
502B
502C

FIG. 5

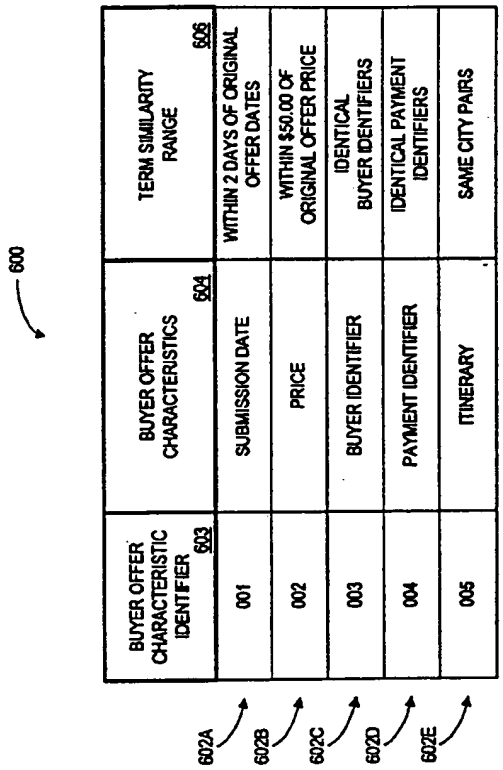
600
BUYER OFFER CHARACTERISTIC IDENTIFIER 603
BUYER OFFER CHARACTERISTICS 604
TERM SIMILARITY RANGE 606
001
SUBMISSION DATE
WITHIN 2 DAYS OF ORIGINAL OFFER DATES
002
PRICE
WITHIN $50.00 OF ORIGINAL OFFER PRICE
003
BUYER IDENTIFIER
IDENTICAL BUYER IDENTIFIERS
004
PAYMENT IDENTIFIER
IDENTICAL PAYMENT IDENTIFIERS
005
ITINERARY
SAME CITY PAIRS
602A
602B
602C
602D
602E

FIG. 6A

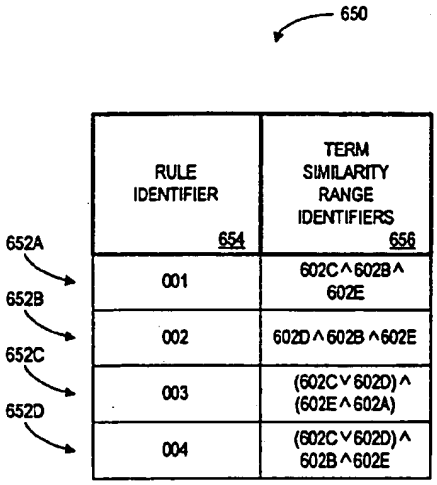
650
652A
652B
652C
652D
RULE IDENTIFIER 654
TERM SIMILARITY RANGE IDENTIFIERS 656
001
602C ^ 602B ^ 602E
002
602D ^ 602B ^ 602E
003
(602C ∨ 602D) ^ (602E ^ 602A)
004
(602C ∨ 602D) ^ 602B ^ 602E

FIG. 6B

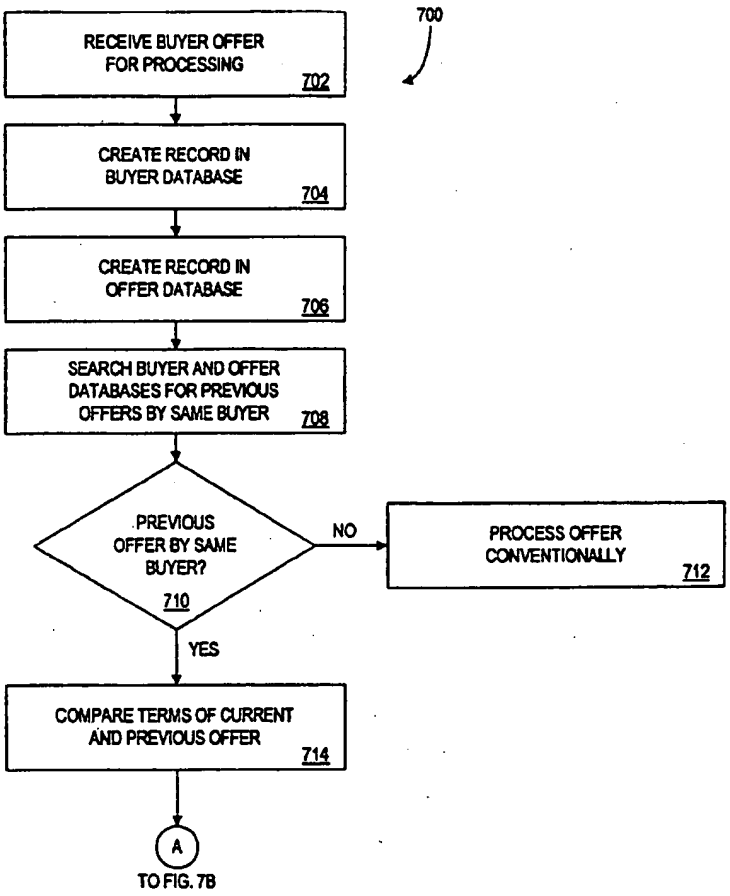
700
RECEIVE BUYER OFFER FOR PROCESSING
702
CREATE RECORD IN BUYER DATABASE
704
CREATE RECORD IN OFFER DATABASE
706
SEARCH BUYER AND OFFER DATABASES FOR PREVIOUS OFFERS BY SAME BUYER
708
PREVIOUS OFFER BY SAME BUYER?
710
NO
PROCESS OFFER CONVENTIONALLY
712
YES
COMPARE TERMS OF CURRENT AND PREVIOUS OFFER
714
A
TO FIG. 7B

FIG. 7A

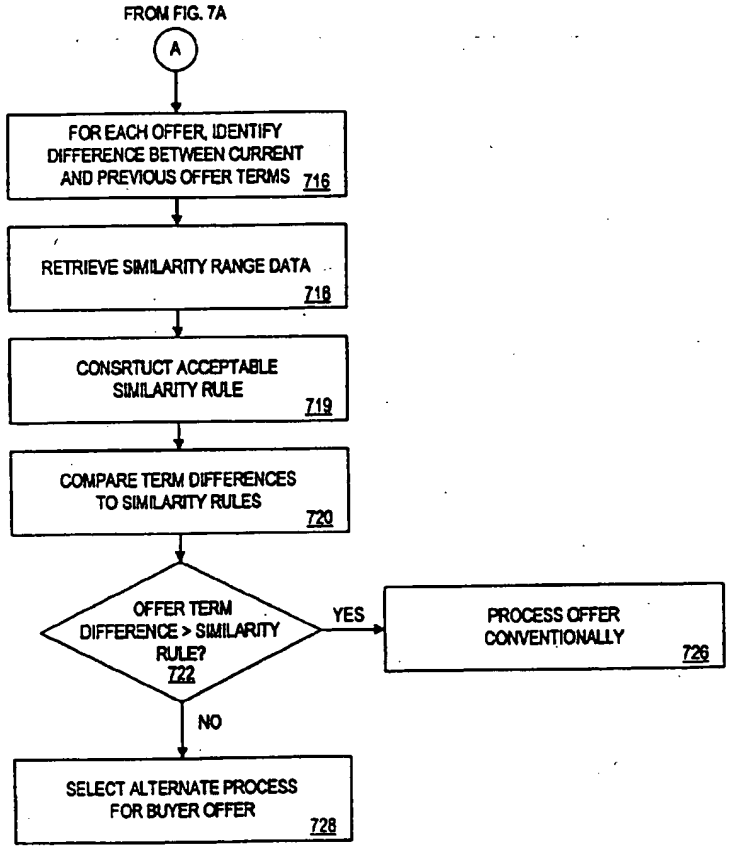
FROM FIG. 7A
A
FOR EACH OFFER, IDENTIFY DIFFERENCE BETWEEN CURRENT AND PREVIOUS OFFER TERMS 716
RETRIEVE SIMILARITY RANGE DATA 718
CONSRTUCT ACCEPTABLE SIMILARITY RULE 719
COMPARE TERM DIFFERENCES TO SIMILARITY RULES 720
OFFER TERM DIFFERENCE > SIMILARITY RULE? 722
YES
PROCESS OFFER CONVENTIONALLY 726
NO
SELECT ALTERNATE PROCESS FOR BUYER OFFER 728

FIG. 7B

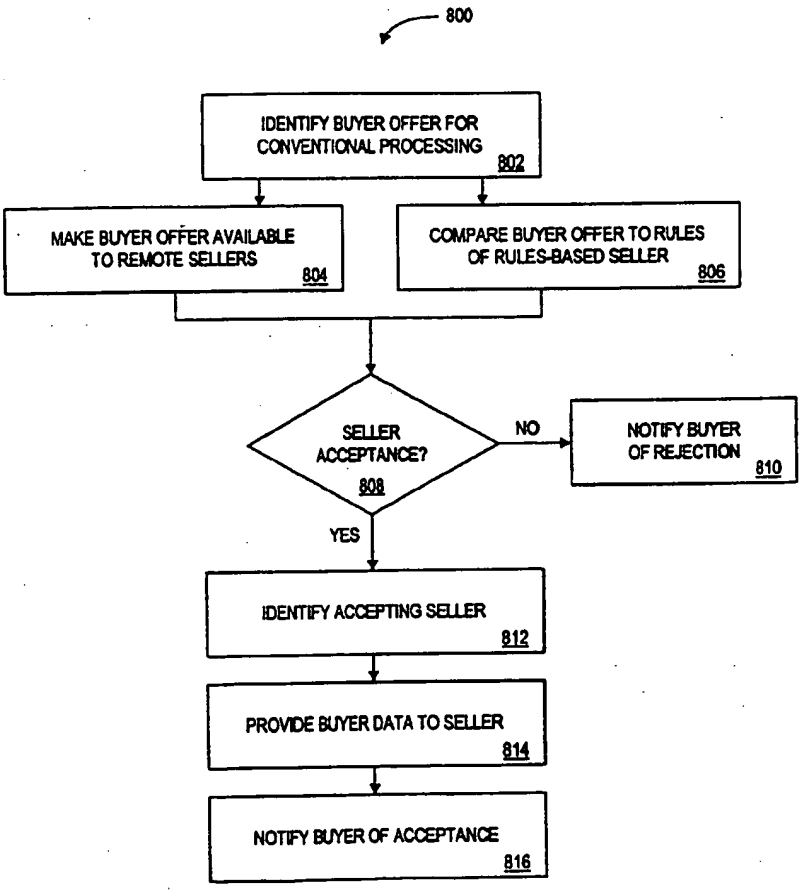
800
IDENTIFY BUYER OFFER FOR CONVENTIONAL PROCESSING
802
MAKE BUYER OFFER AVAILABLE TO REMOTE SELLERS
804
COMPARE BUYER OFFER TO RULES OF RULES-BASED SELLER
806
SELLER ACCEPTANCE?
808
NO
NOTIFY BUYER OF REJECTION
810
YES
IDENTIFY ACCEPTING SELLER
812
PROVIDE BUYER DATA TO SELLER
814
NOTIFY BUYER OF ACCEPTANCE
816

FIG. 8